

REMARKS

Reconsideration of the application, as presently amended, is respectfully requested.

Claims 1-8, 10-19, and 21-22 have been amended. Claims 9 and 20 have been cancelled, without prejudice or disclaimer. Claims 1-8, 10-19, and 21-22 are pending.

Claims 1-8, 14-17, and 19-20 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,406,588 to Birchler et. al. ("Birchler"). Applicant respectfully submits that Birchler fails to teach or suggest at least one of the distinguishing features of amended independent claim 1, namely, transmitting, via a digital cellular radio system, a noise estimation measure to a link quality control system of the digital cellular radio system. Applicant respectfully submits that amended independent claim 1 distinguishes over Birchler and requests that the rejection of claim 1 be withdrawn.

In similar fashion to amended independent claim 1, amended independent claim 14 includes the distinguishing feature of means for transmitting, via the digital cellular radio system, stored consecutively values, an extracted trend, a post-processed version of the stored consecutive values, or a post-processed version of the extracted trend to a quality control system of the digital cellular radio system. Because Birchler fails to teach or suggest at least this distinguishing feature of amended independent claim 14, amended claim 14 is deemed to distinguish over Birchler. Withdrawal of the rejection of claim 14 is respectfully requested.

Dependent claims 2-8, 14-17, and 19 depend from and further limit independent claims 1 and 14 in a patentable sense. For at least the reasons set forth above with respect to independent claims 1 and 14, respectively, dependent claims 2-8, 14-17, and 19 are also deemed to distinguish over Birchler. Withdrawal of the rejection of dependant claims 2-8, 14-17, and 19 as anticipated by Birchler is respectfully requested. Dependant claim 20 has cancelled, thereby rendering the rejection thereof moot.

Claims 6, 9-13, 18, and 21-22 stand rejected in the 35 U.S.C. 103(a) as being unpatentable over Birchler in view of U.S. Patent No. 5,715,240 to Borrás et al. ("Borrás"). The Examiner has apparently cited Borrás as supplying the deficiency of a lack of a digital signal of Birchler. (However, even if it is assumed, for the sake of argument, that the Examiner's characterization of Borrás is correct, Borrás fails to supply the deficiencies of Birchler noted above with respect to independent claims 1 and 14.)

Claim 9 has been cancelled, thereby rendering the objection thereof moot. With respect to claims 6, 10-13, and 18, Applicant respectfully submits that these claims distinguish over the cited combination of Birchler and Borrás for similar reasons to those stated above with respect to the rejection of independent claims 1 and 14 as anticipated by Birchler.

With respect to the rejection of independent claim 21 as obvious over the cited combination of Birchler and Borrás, Applicant respectfully submits that the cited combination of Birchler and Borrás fails to teach, suggest, or render obvious at least one of the distinguishing features of independent claim 21, namely, means for storing, evaluating, and transmitting, via a

digital cellular radio system, at least one of resulting noise estimation measurements and post-processed versions of the resulting noise estimation measurements to a link quality control system of the digital cellular radio system. In contrast to amended independent claim 21, the cited combination of Birchler and Borrás fails to teach, suggest, or render obvious transmitting noise estimation measurements to a link quality control system of a digital cellular system. Applicant respectfully submits that amended independent claim 21 distinguishes over the cited combination of Birchler and Borrás and requests that the rejection of independent claim 21 be withdrawn.

Dependent claim 22 depends from and further limits independent claim 21 in a patentable sense. For at least the reasons set forth above with respect to independent claim 21, Applicant respectfully submits that dependent claim 22 also distinguishes over the cited combination of Birchler and Borrás. Withdrawal of the rejection of dependent claim 22 is respectfully requested.

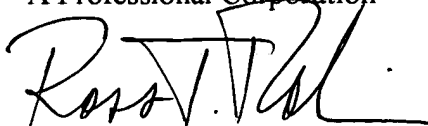
In addition to the claim amendments referenced above, various other amendments have been made to the claims in order to better conform the claims to U.S. practice. These amendments have not been made for any reason related to the statutory requirements for patentability and have not been intended by Applicant to narrow the claims.

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Respectfully submitted,

JENKENS & GILCHRIST,
A Professional Corporation

A handwritten signature in black ink, appearing to read "Ross T. Robinson", written over a horizontal line.

Ross T. Robinson
Reg. No. 47,031

1445 Ross Avenue, Suite 3200
Dallas, Texas 75202-2799
(214) 965-7300
(214) 855-4300 (fax)

EXHIBIT A
MARKED-UP CLAIMS

1. (Twice Amended) A method for estimating residual noise in a frequency range of a desired part of a signal received via a digital cellular radio system, the desired part of the received signal representing a selected channel of the digital cellular radio system, the method comprising:
modifying the amplitude of the received signal, the received signal including the residual noise;
combining the received signal with the modified received signal to create a noise estimation measure; and
[wherein an amplitude of the signal comprising the noise is modified, and the signal is combined with the modified signal to create a] transmitting, via the digital cellular radio system, the noise estimation measure or a post-processed version of the noise estimation measure to a link quality control system of the digital cellular radio system.
2. (Twice Amended) [A] The method according to claim 1, wherein the noise estimation measure is based on an average power content of the signal and the modified signal over their frequency spectra.
3. (Twice Amended) [A] The method according to claim 2, wherein the noise estimation measure is based on the average power content of the signal and the modified signal over one or more common ranges of their frequency spectra.
4. (Twice Amended) [A] The method according to any one of claims 1 to 3, wherein the signal is attenuated primarily outside a frequency range of the desired part of the signal.
5. (Twice Amended) [A] The method according to claim 2 or 3, wherein the noise estimation measure is based on a difference in average power content between the signal and the modified signal.
6. (Twice Amended) [A] The method according to any one of claims 1 to 3, wherein the signal is a digital signal.
7. (Twice Amended) [A] The method according to claim 4, wherein the signal is attenuated primarily outside the frequency range of the desired part of the signal via a digital filter.

8. (Twice Amended) [A] The method according to any one of claims 1 to 3, wherein the noise estimation measure is quantized in a number of different levels each indicating different levels of noise present.

10. (Twice Amended) [A] The method according to claim 9, wherein a noise estimation measurement is performed during each of the basic time units of a channel of the digital cellular radio system, and the result is communicated to a link quality control system of the digital cellular radio system as an estimator of current link quality.

11. (Twice Amended) [A] The method according to claim 9, wherein several noise estimation measurements are performed, the results are stored, and the results are evaluated, and a derived trend is communicated to a link quality control system of a digital cellular radio system as an estimator of current link quality.

12. (Twice Amended) [A] The method according to claim 9, wherein the noise estimation measure transferred to the link quality control system is used by the digital cellular radio system to optimize user information channel throughput by adjusting at least one of the data transmission rate, the error correction depth, and a type of modulation.

13. (Twice Amended) [A] The method according to claim 9, wherein the noise estimation measure is transferred to a digital demodulator and used to adjust a receiver algorithm.

14. (Twice Amended) An apparatus for estimating residual noise in a frequency range of a desired part of a signal received via a digital cellular radio system, the desired part of the received signal representing a selected channel of the digital cellular radio system, the apparatus comprising:

means for modifying an amplitude of the received signal, the received signal comprising the residual noise[,];

means for combining the received signal with the modified signal to create a noise estimation measure[,]; [and]

means for transferring the noise estimation measure to a processing unit

means for storing consecutive values of the noise estimation measure;

means for processing the consecutive values to extract a trend;

means for transmitting, via the digital cellular radio system, the stored consecutive values, the extracted trend, a post-processed version of the stored consecutive values, or a post-processed version of the extracted trend to a quality control system of the digital cellular radio system.

15. (Twice Amended) [A] The apparatus according to claim 14, wherein the means modified for combining the signal with the signal to create a noise estimation measure comprise a power meter for measuring average power content of the signal and the modified signal over at least one of a plurality of common ranges of their frequency spectra.

16. (Twice Amended) [A] The apparatus according to claim 14 or 15, wherein the means for modifying the amplitude of the signal comprising the noise include means for attenuating the signal primarily outside the frequency range of the desired part of the signal.

17. (Twice Amended) [A] The apparatus according to claim 15, wherein the means for combining the signal with the modified signal to create a noise estimation measure comprise means for computing a difference in average power content between the signal and the modified signal.

18. (Twice Amended) [A] The apparatus according to claim 14 or 15, wherein the apparatus is adapted to handle digital signals.

19. (Twice Amended) [A] The apparatus according to claim 18, wherein the means for attenuating the signal primarily outside the frequency range of the desired part of the signal comprise a digital filter.

21. (Twice Amended) A mobile telephone [having an apparatus, the apparatus]comprising:

means for estimating residual noise in a frequency range of a desired part of a signal received via a digital cellular radio system, the desired part of the received signal representing a selected channel of the digital cellular radio system

wherein the amplitude of the received signal [comprising the noise]is modified, the received signal comprising the residual noise;

wherein [and]the received signal is combined with the modified received signal to create a noise estimation measure[,];

means for estimating residual noise in the frequency range of the desired part of the received signal[,]; [and]

means for storing, evaluating, and transmitting, via the digital cellular radio system, at least one of resulting noise estimation measurements and [postprocessed] post-processed versions [thereof] of the resulting noise estimation measurements to a link quality control system of [a]the digital cellular radio system.

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22. (Twice Amended) [A] The mobile telephone according to claim 21, wherein the mobile telephone is adapted to perform a noise estimation measurement during each of a plurality of basic time units of a channel of the digital cellular radio system.